REMARKS

The Examiner's attention to the present application is noted with appreciation.

In Sections 2 and 3 of the Office Action, the Examiner stated that copies of references were missing. Copies of those references are enclosed herein.

In Section 4 of the Office Action, the Examiner objected to the term "DNA" as lacking a definition on line 22 of page 3 in the specification. Because the term "DNA" does not occur anywhere on page 3 of the specification, it is believed that the Examiner was referring to the occurrence of the term "DNA" on line 25 of page 2. The specification has been amended to define this term as known to those of ordinary skill in the art.

In Sections 5 and 6 of the Office Action, the Examiner asserted that the incorporation of essential matter by reference was improper. The referenced material is not incorporated for the purposes of providing essential material which is not already contained within the application. Rather, the references that are incorporated merely serve as background information for a reader, and so are proper.

In Section 8 of the Office Action, the Examiner rejected claims 2 and 32 under 35 U.S.C. § 112 as being indefinite due to the use of the term "substantially". This rejection is traversed. The Court of Appeals for the Federal Circuit has already addressed the issue of indefiniteness for term "substantially" in *Seattle Box Co., Inc. v. Industrial Crating & Packing, Inc.*, 731 F.2d 818 (Fed. Cir. 1984). In that case, it was asserted that the term "substantially equal to" led to the claim being regarded as indefinite. With respect to the assertion that the claims were thus rendered indefinite, the court, at page 826 of that opinion, stated:

> "Definiteness problems often arise when words of degree are used in a claim. That some claim language may not be precise, however, does not automatically render a claim invalid. When a word of degree is used the district court must determine whether the patent's specification provides some standard for measuring that degree. The trial court must decide, that is, whether one of ordinary skill in the art would understand what is claimed when the claim is read in light of the specification."

In another case that centered on the term "substantially", the court in *Deering Precision Instruments, L.L.C. v. Vector Distribution Sys., Inc.*, 347 F.3d 1314 (Fed. Cir. 2003) stated: "This court is asked, once again, to construe the meaning of the term "substantially" in a patent claim. *See, e.g., Epcon Gas Sys.,*

Inc. v. Bauer Compressors, Inc., 279 F.3d 1022 (Fed.Cir.2002) (construing the terms "substantially constant" and "substantially below"); *Zodiac Pool Care, Inc. v. Hoffinger Indus., Inc.*, 206 F.3d 1408 (Fed.Cir.2000) (construing the term "substantially inward"); *York Prods., Inc. v. Cent. Tractor Farm & Family Ctr.*, 99 F.3d 1568 (Fed.Cir.1996) (construing the term "substantially the entire height thereof"); *Tex. Instruments Inc. v. Cypress Semiconductor Corp.*, 90 F.3d 1558 (Fed.Cir.1996) (construing the term "substantially in the common plane")." (*Id.* at 1322). In reference to the present application, those skilled in the art will readily understand what is claimed in claims 2 and 32 with respect to the phrase "substantially indistinguishable from Gaussian white noise" and the term "substantially" does not render the claims indefinite.

In Section 10 of the Office Action, the Examiner rejected claims 1-10, 13-20, and 22 under 35 U.S.C. § 103 as being unpatentable over Bianco et al. in view of Meister et al. This rejection is traversed, particularly as to the claims as amended. In making the rejection, the Examiner stated that Bianco et al. teach a method having the step of applying a transformation to the initial measurement to generate reference template data somewhere within Col. 26, lines 48-67, and Col. 27, lines 1-67. Nowhere within the 87 lines of text cited by the Examiner is there any mention of "applying a transformation to the initial measurement". Rather, what Bianco et al. do disclose in column 27, on lines 22-27, is "biometric device object **1222** is used to enroll the user by requesting multiple samples of a particular type of "live" biometric data from the user. Biometric device object **1222** uses the samples of biometric data to create an [sic] unique biometric template **502** (FIG. 5) for the user." In other words, what Bianco et al. are disclosing is that multiple samples (A.K.A. multiple measurements) are taken for a user, these multiple measurements are then stored and together they uniquely define the individual. As such, all that Bianco et al. disclose is taking and storing several measurements of a user. Nowhere in the portion of the specification cited by the Examiner, or any other portion of Bianco et al., is there any mention of a "transformation" being performed on the measurements. Those skilled in the art will readily recognize that a "transformation" such as that claimed by Applicants is a when a mathematical formula is applied to data. Examples of common transformations include Fast Fourier Transformations; Laplace

Transforms; Lorentz Transforms; etc. What a transformation is not is an act of simply storing data for use as a template as is described by Bianco et al. Independent claim 1 has been amended such that it now relates to "applying a transformation to an initial measurement to generate encrypted reference data; . . . applying the transformation to the subsequent measurement such that it is encrypted; and calculating a Euclidean distance metric between the encrypted measurements". As such, in addition to Bainco et al. failing to disclose applying a transformation to the data, Bianco et al. also fail to disclose the ability to encrypt the data. Because Applicants' invention not only encrypts the measured data but also possesses the ability to compare two sets of encrypted data without revealing them, Applicants' invention can be used to compare and thus verify sensitive data without revealing the data.

In Section 10 of the Office Action, the Examiner further asserted that "Bianco does not expressly disclose calculating a Euclidean distance metric between the transformed measurements". However, the Examiner asserted that Meister et al. do teach that element of Applicants' claim and the Examiner further stated that one would be motivated to combine these disclosures because "a comparison of biometric data detected with stored reference values provides a way of authenticating/verifying a biometric characteristic". As previously indicated, independent claim 1 has been amended such that it now recites "applying a transformation to an initial measurement to generate encrypted reference data". None of Bianco et al., Meister et al., nor any combination thereof disclose applying a transform to the initial measurement to generate encrypted reference data. Further, none of Bianco et al., Meister et al., nor any combination thereof disclose "applying the transformation to the subsequent measurement such that it is encrypted". Therefore none of Bianco et al., Meister et al., nor any combination thereof could possibly disclose "calculating a Euclidean distance metric between the encrypted measurements". Still further, none of Bianco et al., Meister et al., nor an combination thereof teach that the "calculated Euclidean distance metric is identical to a Euclidean distance metric between the measurements prior to transformation" as claimed by Applicants.

Because no combination of the prior art teach "generating encrypted data", "encrypted measurements" or encrypting data generally. Applicants' independent claim 1, as well as dependent claims 2-10, 13-20, and 22 are thus allowable over the prior art.

In Sections 11, 12, and 13 of the Office Action, the Examiner rejected claim 11, 12, and 21 respectively under 35 U.S.C. § 103. In so rejecting these claims, the Examiner adds the references of Wyner and Meyer et al. to the already cited combination of Bianco et al., in view of Meister et al. These rejections are traversed, particularly as to the claims as amended. Because each of dependent claims 11, 12, and 21 ultimately depend from independent claim 1, the above arguments with respect to claim 1 are equally applicable here. This is because no combination of the cited art can be combined to anticipate each element of independent claim 1, much less the dependent claims thereof. Further, Bianco et al. and Meister et al. each relate to biometrics while Meyer et al. is directed to embedding data in compressed audio, image video, and other media files. One looking to design a system which obtains and subsequently compares measurements of human features in accordance with standard biometric practices would not look to the specification of a patent which is related to embedding data in audio, image video, and other media files.

In Section 14 of the Office Action, the Examiner rejected claims 23-32, 35-38, and 40 under 35 U.S.C. § 103 as being unpatentable over Bianco et al. in view of Meister et al. and further in view of Rahtgen. In so rejecting the claims, the Examiner asserts that "Bianco teaches a method of concealing multidimensional digital input data and maintaining an ability to authenticate the concealed data." The Examiner indicates that Bianco et al. teach this on Col. 17 from line 36 to 67. This rejection is traversed, particularly as to the amended claims. Bianco et al. do not teach "concealing multidimensional data". This is because Bianco et al. do not conceal the data. Rather, Bianco et al. teach taking a measurement, storing the measurement, and finally comparing a stored prior measurement to a current measurement. Bianco et al. teach various other embodiments which focus on this basic theme. For example, in the very portion cited by the Examiner, at Col. 17, lines 44-48, Bianco et al. state that "[b]iometric template **502** stores the user's unique biometric measurement for a particular biometric device, which is then used to

match against the user's "live" biometric measurement when the biometric device is attempting to identify the user." To summarize, Bianco et al. teaches storing measurements in a template and then comparing those to a current ("live") measurement of a user. This is done to determine if the live user has the same measurements as the user whose measurements are stored in the temple and thus use biometrics to identify a person. Further, independent claim 23 has been amended such that it relates to a method for encrypting multidimensional data. None of the prior art cited by the Examiner either alone or in combination disclose a method for encrypting multidimensional data. As such, independent claim 23, as well as dependent claims 24-32, 35-38, and 40 are allowable over the prior art.

In Sections 15, 16, and 17 of the Office Action, the Examiner rejected claims 33, 34, and 39 respectively under 35 U.S.C. § 103 as being unpatentable over Bianco, in view of Meister, and further in view of Rahtgen, and still further in view of each of Wyner, Meyer, and MacAleese respectively. These rejections are traversed. In combining four (4) different references, the Examiner is attempting to allege that Applicants' invention is obvious in a post facto manner. This is because one skilled in the art would not look to the six different references which the Examiner has been required to search for in an attempt to reject Applicants' claim. The only reason that the Examiner has been able to find such an extended list of references which must be combined in a novel manner is because the Examiner has already been made privy to Applicants' invention. Although each of claims 33, 34, and 39 share allowable independent base claim 23 and each are thus also allowable, claims 33, 34, and 39 are also allowable over the numerous cited references because a person not having prior knowledge of Applicants' novel invention would not be able to come up with such a unique combination of the prior art references.

In Section 18 of the Office Action, the Examiner rejected claim 41 under 35 U.S.C. § 103 as being unpatentable over Bianco in view of Rathgen. This rejection is traversed, particularly as to amended claim 41. In rejecting Applicants' claim, the Examiner asserted that Bianco discloses Applying a transformation to the measurement to substantially conceal the measurement. As before, the Examiner asserted that support for this assertion can be found somewhere within Col. 26, lines 48-67, and Col. 27, lines 1-67 of Bianco. In accordance with Applicants' prior assertion, nowhere within the 87 lines of text cited by the

Examiner is there any mention of "applying a transformation to the initial measurement". What Bianco et al. do disclose is that multiple samples are taken for a user and stored. As such, all that Bianco et al. disclose is taking and storing several measurements of a user. No mention of the application of a "transformation" being performed on the measurements is made by Bianco. Claim 41 is thus allowable over the cited art.

In view of the above amendments and remarks, it is respectfully submitted that all grounds of rejection and objection have been avoided and/or traversed. It is believed that the case is now in condition for allowance and same is respectfully requested.

If any issues remain, or if the Examiner believes that prosecution of this application might be expedited by discussion of the issues, the Examiner is cordially invited to telephone the undersigned attorney for Applicant at the telephone number listed below.

Authorization is given to charge payment of any additional fees required, or credit any overpayment, to Deposit Acct. 13-4213.

Respectfully submitted,

By: _____

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